



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,084	10/04/2001	Naoki Takahashi	50023-153	9518
20277	7590	01/09/2006	EXAMINER	
MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			BAKER, CHARLOTTE M	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/970,084	TAKAHASHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Charlotte M. Baker	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 23 and 24 is/are allowed.
- 6) Claim(s) 1-3, 7-8, 10, 12-13 and 15-22 is/are rejected.
- 7) Claim(s) 4-6, 9, 11 and 14 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.                                                |

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed 12/08/2005 have been fully considered but they are not persuasive.
2. Applicant argues that the claimed invention includes the contour correcting means for detecting a probable edge point thought to be a document edge point. Sugiura discloses location of the edge of a document (see col. 5, ln. 55-59).
3. Applicant argues that in a sky shot, it is possible to reproduce a document image properly. Sugiura also discloses that the detection method makes it possible to detect a document correctly even when a document cover is open (sky shot) (see col. 5, ln. 60-64).
4. Applicant argues that Sugiura does not disclose detecting a pixel with the quantity of density higher than a threshold value. Examiner respectfully traverses. The purpose of Sugiura's detection of density changes from a white level to a black level is to determine the document edge (see col. 5, ln. 53-59). Examiner interprets the white and black levels to be threshold values.
5. Applicant argues that Sugiura's apparatus is not capable of reproducing a document image properly at the sky shot. Examiner respectfully traverses. It is evident in Sugiura's disclosure at col. 5, ln. 60-64 that it is capable of correctly detecting a document when the document cover is open (sky shot).
6. In response to Applicant's argument regarding the rejection of claims 3 and 21, Examiner is maintaining the rejection of independent claim 1; therefore, the rejection of claims 3 and 21

are also being maintained. Applicant did not provide further argument of claims 3 and 21 other than the basis of independent claim 1 not being disclosed by Sugiura.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 7-8, 10, 12-13, 15-20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugiura (5,068,913).

**Regarding claim 1:** Sugiura discloses contour detecting means (CCD 20 and col. 6, ln. 14) for detecting, for each object reading line (CCD reads linearly, see col. 6, ln. 10-14), a pixel (pixel, col. 6, ln. 24-26) with the quantity of change in density higher than a threshold value (location of the edge of a document is detected as the point where the density changes from the white level to the black level, col. 5, ln. 57-59 and Fig. 6a and 6b) as a probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) thought to be a document edge point (detection of image area of document 6, Fig. 2, a-d), and contour correction means (Fig. 6b, P153, effective image signal enabled) for determining whether the probable edge point is a document edge point (detection of image area of document 6, Fig. 2, a-d) indicating the position of a document edge on the basis of the position of said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25), said contour correction means (Fig. 6b, P153, effective image signal enabled) recognizing the probable edge point as the document edge point (detection of image area of document 6, Fig. 2, a-d), upon determining the probable edge point (left and right edge of

image initial values, col. 6, ln. 24-25) to be the document edge point (detection of image area of document 6, Fig. 2, a-d).

**Regarding claim 2:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses wherein said contour detecting means (CCD 20 and col. 6, ln. 14) is provided with density change calculating means (Fig. 6a, and 6b flow and detection of image area by using data stored in the line RAM 50, col. 6, ln. 18-19) for working out the quantity of change in density (black level or white level) on the basis of the image density of pixels around an object pixel (pixel of CCD 20).

**Regarding claim 7:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses wherein said contour correction means (Fig. 6b, P153, effective image signal enabled) determines as permissible scope a scope of a specific distance on an object reading line (an image area is detected by CCD 20 by moving the scan position of CCD 20 successively from the top edge 7f to the bottom of the document in the subscan direction, col. 6, ln. 14-17) (CCD reads linearly, see col. 6, ln. 10-14) on the basis of a straight line passing (flow is repeated per each main scan through subscanning, col. 6, ln. 20-21) through two probable edge points (left and right edge of image initial values, col. 6, ln. 24-25) detected on separate reading lines (CCD reads linearly, see col. 6, ln. 10-14) between which a specific number of reading lines are intervened (top and bottom positions of the pixel of CCD 20, col. 6, ln. 25-26), and recognizes a probable edge point on the object reading line (CCD reads linearly, see col. 6, ln. 10-14) (left and right edge of image initial values, col. 6, ln. 24-25) present in said permissible scope as said document edge point (detection of image area of document 6, Fig. 2, a-d).

**Regarding claim 8:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses wherein said contour correction means (Fig. 6b, P153, effective image signal enabled) determines as permissible scope a scope of a specific distance on an object reading line (an image area is detected by CCD 20 by moving the scan position of CCD 20 successively from the top edge 7f to the bottom of the document in the subscan direction, col. 6, ln. 14-17) on the basis of a probable edge point detected on a reading line (left and right edge of image initial values, col. 6, ln. 24-25) separated from the object reading line by a specific number of reading lines (top and bottom positions of the pixel of CCD 20, col. 6, ln. 25-26), and recognizes said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) as said document edge point (detection of image area of document 6, Fig. 2, a-d) when said object probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) on the object reading line (CCD reads linearly, see col. 6, ln. 10-14) (is present in said permissible scope (an image area is detected by CCD 20 by moving the scan position of CCD 20 successively from the top edge 7f to the bottom of the document in the subscan direction, col. 6, ln. 14-17)).

**Regarding claim 10:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses wherein in a reading line (line in scan process) where said document edge point (detection of image area of document 6, Fig. 2, a-d) is not recognized (data is black level, col. 6, ln. 29-31), said contour correction means (Fig. 6b, P153, effective image signal enabled) recognizes a specific pixel (pixel of CCD 20) belonging to said reading line (line in scan process) as said document edge point (detection of image area of document 6, Fig. 2, a-d) on the basis of document edge points (detection of image area of document 6, Fig. 2, a-d) recognized on other reading lines (col. 6, ln 35-40).

**Regarding claim 12:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses wherein said contour correction means (Fig. 6b, P153, effective image signal enabled) acquires positional information (col. 6, ln. 22-26) on said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) by scanning image data in one or a plurality of directions (col. 6, ln. 18-21), said image data outputted from said image sensor (CCD 20), and recognizes said document edge point (detection of image area of document 6, Fig. 2, a-d) on the basis of positional information acquired by scanning in one direction or in different directions (main scan and subscan, col. 6, ln. 18-21).

**Regarding claim 13:** Sugiura satisfies all the elements of claim 12. Sugiura further discloses wherein when said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) is not detected (data is black level, col. 6, ln. 29-31) on a specific number of consecutive reading lines counted from the object reading line (initial values, left and right edge of the image, col. 6, ln. 24-26) in a specific direction (top and bottom positions of the pixel of the CCD 20, col. 6, ln. 25-26) where said probable edge point is detected (left and right edge of image initial values, col. 6, ln. 24-25), said contour correction means (Fig. 6b, P153, effective image signal enabled) scans the image data in an opposite direction (col. 7, ln. 30-34), said image data outputted from said image sensor (CCD 20) (Fig. 3, data is at the output of image sensor (CCD) 20).

**Regarding claim 15:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses thinning out means for recognizing a representative value (black level or white value) on the basis of positional information (an image area is detected by CCD 20 by moving the scan position of CCD 20 successively from the top edge 7f to the bottom of the document in the

Art Unit: 2626

subscan direction, col. 6, ln. 14-17) on said probable edge point detected (left and right edge of image initial values, col. 6, ln. 24-25) on one or a plurality of reading lines (main scan and subscan operations) and contour correction means (Fig. 6b, P153, effective image signal enabled) for recognizing the document edge point (detection of image area of document 6, Fig. 2, a-d) on the basis of said representative value (black level or white level).

**Regarding claim 16:** Sugiura satisfies all the elements of claim 15. Sugiura further discloses wherein said representative value (black level or white level) is a middle point (black level or white level is the basis of the determination of document edge) between two probable edge points (left and right edge of image initial values, col. 6, ln. 24-25).

**Regarding claim 17:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses which is provided with signal generating means (Fig. 3, output circuit 54) for generating effective width signals (col. 3, ln. 62-64) indicating a document contour (actual image area) on the basis of said document edge point (detection of image area of document 6, Fig. 2, a-d) and image forming means (external apparatus 60, col. 3, ln. 59-62) for generating an image within the document contour (actual image area) on the basis of image data outputted from said image sensor (CCD 20) and said effective width signals (effective image signal, Fig. 3, and col. 3, ln. 62-64).

**Regarding claim 18:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses which is provided with output substitution means (Fig. 3, effective image signal) for detecting the outside of a document contour of the image data (detected as a black frame, col. 5, ln 60-64) outputted from said image sensor (CCD 20) on the basis of said document edge point (detection of image area of document 6, Fig. 2, a-d), substituting the image data outside said document

contour (detected as a black frame, col. 5, ln. 60-64) with a white image and outputting the data (this is evidenced by the effective image signal which indicates that the image signal is of an actual image area (black frame not present), col. 3, ln. 56-64).

**Regarding claim 19:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses which is provided with image data substituting means (Fig. 3, effective image signal) for detecting the outside of a document contour of the image data (detected as a black frame, col. 5, ln 60-64) on the basis of said document edge point (detection of image area of document 6, Fig. 2, a-d), said image data stored in an image memory (Fig. 3, line RAM 50) for storing said image data outputted from said image sensor (CCD 20), and substituting the image data outside said document contour with a white image (this is evidenced by the effective image signal which indicates that the image signal is of an actual image area (black frame not present), col. 3, ln. 56-64).

**Regarding claim 20:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses document image reading means (Fig. 1, image reader and col. 2, ln. 45-46) for detecting a document contour of the image data (actual image area) on the basis of said document edge points (detection of image area of document 6, Fig. 2, a-d), said image data stored in an image memory (Fig. 3, line RAM 50), and outputting the image data (actual image area) within said detected document image contour only (Fig. 3, effective image signal).

**Regarding claim 22:** Sugiura discloses contour detecting means (CCD 20 and col. 6, ln. 14) for detecting a pixel (pixel, col. 6, ln. 24-26) as probable edge point (left and right edge of image initial values, col. 6, ln. 24-25) thought to be a document edge point (detection of image area of document 6, Fig. 2, a-d), said pixel having a higher quantity of change in density than a threshold

value (location of the edge of a document is detected as the point where the density changes from the white level to the black level, col. 5, ln. 57-59 and Fig. 6a and 6b), and contour correction means (Fig. 6b, P153, effective image signal enabled) for recognizing a document edge point (detection of image area of document 6, Fig. 2, a-d) indicating the position of a document edge on the basis of the position of said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura in view of Houjiyou et al. (4,929,844).

**Regarding claim 3:** Sugiura satisfies all the elements of claim 2. Sugiura further discloses contour detecting means (CCD 20 and col. 6, ln. 14) for detecting an object pixel (pixel of CCD 20) as said probable edge point (left and right edge of image initial values, col. 6, ln. 24-25); in the direction of scanning (main scan, col. 3, ln. 36) are binarized on a specific slice level (A/D converter connected to shading circuit 46 and binarized data are stored in line RAM 50 and col. 3, ln. 30-37).

Sugiura fails to specifically address a judgement means or the case of the respective pixel values are identical.

Houjiyou et al. disclose judgement means (paper-size detecting section A through D); and if the values of the respective pixels are identical when the densities of a specific number of consecutive pixels (determining if document is truly present or if light getting in has caused an erroneous determination col. 4, ln. 21-57).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the paper-size detecting section A through D of Houjiyou et al. with the CCD 20 of Sugiura in order to automatically detect the presence or absence of a document as taught by Houjiyou et al. (col. 1, ln: 11-12). Additionally, to include the case of ensuring that the level is detected correctly to ensure that the document is present and a detection was not caused due to light getting in. This feature would also enable automatic detection of the presence or absence of the document.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura in view of Migita et al. (4,870,457).

**Regarding claim 21:** Sugiura satisfies all the elements of claim 1. Sugiura further discloses and, in case the document cover is opened (col. 5, ln. 62), actuates said contour detecting means (CCD 20 and col. 6, ln. 14); said image sensor (CCD 20) from outside .

Sugiura fails to specifically address closing and opening detection means.

Migita et al. disclose closing and opening detection means (Fig. 4, detector 7 OCSW) for detecting a document cover to prevent light from reaching and the opening and closing of said document cover.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include detector 7 of Migata et al. connected to the CPU 42 of Sugiura in order to

Art Unit: 2626

eliminate unwanted black areas at the edges of an image as taught by Migata et al. (col. 1, ln. 13-14).

*Allowable Subject Matter*

12. Claims 23-24 are allowed.
13. Claims 4-6, 9, 11, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlotte M. Baker whose telephone number is 571-272-7459. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571-272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CMB  
CMB

KAWilliams  
KIMBERLY WILLIAMS  
SUPERVISORY PATENT EXAMINER